Radiofrequency Ablation with Anesthesia:
A Guide for Patients

Information:

Cancer has traditionally been approached either systemically with chemotherapy, or locally with surgery or radiation therapy. Recent advancements in minimally invasive therapies are adding another tool to the anticancer arsenal. Thermal ablation is heating tumors so hot that the tumor cells die. It has been studied in many forms, including microwave, laser, high-intensity focused ultrasound, and cryotherapy. Radiofrequency thermal ablation or radiofrequency ablation (RFA) has emerged as the safest, easiest, and most predictable technology used for thermal ablation in bone, liver, kidney, heart, prostate, breast, brain lymph nodes, nerve ganglia, and soft tissue.

Heat has been used in medicine as long as history. Ancient Hindu medicine used heated metal bars and the Greeks used heated stones to stop bleeding. Electrocautery has been used for decades in surgery to fulgurate, cauterize, cut tissue, and stop bleeding. The RFA generator uses a slight modification of the old technology to deposit the energy over a larger volume. The RFA generator also cauterizes tissue as it heats it, thus limiting blood loss and decreasing the risk of bleeding.

What is Radiofrequency Ablation?

Percutaneous radiofrequency ablation is a new way to treat cancer. “Percutaneous” means through the skin. “Radiofrequency” refers to the radio waves used in this treatment. “Ablation” means tissue destruction. In this type of treatment, radio waves create heat to destroy the tumor.

Together, these words mean radio waves, sent via a probe put through a small cut in the skin, to kill cancer tumors with heat.
What are some common uses of the procedure?

Recent developments in RFA technology make large-volume tissue ablation (or cooking tumors) effective for local control of some cancers. Local tumor control is an option for some patients who are not ideal surgical candidates, have failed conventional therapies, have contraindications to surgery, or recurrent tumors. RFA may also expand surgical options. For example, RFA may convert an inoperable patient into a surgical candidate by treating small liver lesions that are too difficult or too spread out to remove with surgery.

Needle-based tissue ablation techniques performed through the skin may provide alternatives to open surgical procedures in certain patients and may augment conventional therapies.

How does this procedure work?

CT (computed tomography) scans and/or Ultrasound images help the radiologist guide a probe through the skin and directly into the tumor. The probe is connected to equipment that delivers radio waves into the probe’s tip. These radio waves create heat in the tissue around the tip of the probe. This heat kills the cells in a small area around the probe tip. Ultrasound and CT images are used during the procedure to check the probe’s position and to verify the area of tissue that has been treated.

Depending on the tumor’s size, the probe may be guided and repositioned during the procedure to try to destroy the whole tumor.

Is it safe?

Although RFA is relatively safe and minimally invasive, the benefits do not come without risks. These will be explained to you in detail by the radiologist before you give your consent.

Will it hurt?

You will have an anesthesiologist for this procedure to continuously monitor you to make sure you are safe and comfortable. You will receive pain and sedation medication through
your IV line. Whenever you feel discomfort, you may be given pain medication. You may or may not remain awake, depending on how deeply you are sedated.

**What will happen during the procedure?**

Upon arriving to the imaging department, you will meet the staff that will be with you during your procedure. You will have a Radiologist, an Anesthesiologist, a Registered Nurse and 3-4 technologists specially trained in the area where your procedure will be done. The radiologist and anesthesiologist will explain the procedure, including the benefits and the risks, and then obtain a written consent after all your questions have been answered.

After you lie down on the CT table, you will be connected to monitoring equipment so that we can ensure your safety during the procedure. Some initial imaging pictures will be taken for the radiologist to view before the procedure begins. Once the procedure is ready to begin, the anesthesiologist will give you medication through your IV for pain and sedation to keep you comfortable during the procedure. You will be asked to stay still during the procedure. From time to time, the radiologist may ask you to take a deep breath, hold your breath, and/or exhale as the probe is positioned. Grounding pads will be placed on your thighs. Your skin will be cleaned with an antiseptic solution and sterile towels are placed over the area to avoid infection. Local anesthetic (numbing medication) is injected into the skin. Once the area is numb, the radiologist passes a special type of probe through the skin into the area of abnormality. At this time, you may have more imaging pictures taken. These pictures will assure the radiologist that the probe is in the exact location of the abnormal tissue.

Most RFA procedures take 3-5 hours total time in the room. Most of this time is spent preparing you for your procedure. Each treatment session has about 10 to 15 minutes of active ablation. The number of sessions will be determined by your radiologist.

Once the procedure is over, a small bandage will be placed on the procedure site(s).

**After the test, what can I expect?**

You will be taken to the PACU (recovery room) and monitored until you are awake and ready to go back up to your room. Although the effect of anesthesia takes only a few moments to begin, the time it takes to recover can vary from patient to patient. This means that patients will awaken from anesthesia at different rates. Most patients will be fully
alert upon arriving in the recovery room while others may be sleepy or feel groggy for hours after their procedure.

Nausea and vomiting are occasional side effects after anesthesia. The anesthesiologist will order any needed medication to help keep you comfortable as you recover from the anesthesia and procedure.

After you have recovered from the anesthesia, you will be taken back to your room for observation for approximately 4 hours. A Registered Nurse will monitor your vital signs and observe for any complications. You will go home after the observation period. A ride home is required.

**What happens to the tissue after the procedure?**

The killed tumor cells are not removed. The body will shed dead tissue through its natural functions. Over the next few months, the treated tissue may shrink and be replaced by scar tissue.

**How will I feel when I get home?**

It is common to have some discomfort and/or bruising at the site after the procedure. The radiologist may prescribe pain medication. Otherwise, Tylenol is usually effective in relieving any discomfort you may have. Some patient’s will develop a “post-ablation syndrome” with flu-like symptoms that appear three to five days after the procedure and usually last about five days, this is normal.

**What if I have other questions?**

If you have any questions, concerns, or need to reschedule your appointment, you may call (310) 784-6320 M-F from 8:00 a.m. - 4:30 p.m. and speak to an Imaging RN.